

**REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed November 5, 2003 (Paper No. 3). Upon entry of this response, claims 1-49 are pending in the application. Claims 1, 6-8, 14, 19, and 25-27 have been amended, and claims 47-49 have been added. Applicant asserts that the amendments add no new subject matter to the present application. Applicant respectfully requests that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

1. Rejection of Claim 19 under 35 U.S.C. §102

Claim 19 has been rejected under 35 U.S.C. §102(b) as allegedly anticipated by *Holthaus* (U.S. 6,229,897). Applicant respectfully traverses this rejection. A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983).

Applicant respectfully submits that *Holthaus* fails to teach, disclose or suggest at least a “means for generating, at a symbol rate different than the bit transmission rate, a PNS.” In *Holthaus*, the block diagram of the transmitter in FIG. 2 shows A/D converter 13 producing a digital bit stream, which is filtered by filter 40, then scrambled by scrambler 15. The scrambled bit stream is combined, by linear combiner 16, with the stream of pseudo random bits from PN generator 14.

There is nothing in *Holthaus* to suggest the rate at which the bits are scrambled by scrambler 15 (FIG. 2) is different than the bit transmission rate. In contrast, Applicants’ claimed invention generates a PNS at the symbol rate which is distinct from the bit stream data rate. (p. 10, lines 1-10).

For at least the reason that *Holthaus* fails to disclose, teach or suggest at least a “means for generating, at a symbol rate different than the bit transmission rate, a PNS,” Applicant respectfully submits that *Holthaus* does not anticipate claim 19. Therefore, Applicant requests that the Examiner’s rejection of claim 19 be withdrawn.

2. Rejection of Claim 1 under 35 U.S.C. §103

Claim 1 has been rejected under §103(a) as allegedly obvious over *Holthaus* (U.S. 6,229,897) in view of *Doshi* (U.S. 6,349,138). Applicant respectfully traverses this rejection. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

Applicant respectfully submits that claim 1 is allowable for at least the reason that the proposed combination of *Holthaus* in view of *Doshi* does not disclose, teach, or suggest at least the feature of “generating, at a symbol rate different than the bit transmission rate, a PNS” as recited in amended claim 1.

In *Holthaus*, the block diagram of the transmitter in FIG. 2 shows A/D converter 13 producing a digital bit stream, which is filtered by filter 40, then scrambled by scrambler 15. The scrambled bit stream is combined, by linear combiner 16, with the stream of pseudo random bits from PN generator 14. There is nothing in *Holthaus* to suggest the rate at which the bits are scrambled by scrambler 15 (FIG. 2) is different than the bit transmission rate. In contrast, Applicants’ claimed invention generates a PNS at the symbol rate, which is distinct from the bit stream data rate. (p. 10, lines 1-10). Thus, *Holthaus* fails to teach, suggest, or disclose at least a

“generating, at a symbol rate different than the bit transmission rate, a PNS,” as recited in amended claim 1.

*Doshi* contains no discussion whatsoever of generating a PNS, and therefore fails to teach, suggest, or disclose at least a “generating, at a symbol rate different than the bit transmission rate, a PNS.” Accordingly, the proposed combination of *Holthaus* in view of *Doshi* does not teach at least the claimed limitations of a “generating, at a symbol rate different than the bit transmission rate, a PNS,” as recited in amended claim 1. Since the proposed combination does not teach at least the above-described features recited in claim 1, a *prima facie* case establishing an obviousness rejection by *Holthaus* in view of *Doshi* has not been made. Thus, claim 1 is not obvious under the proposed combination, and the rejection should be withdrawn.

### 3. Rejection of Claims 2, 6, 24, and 25 under 35 U.S.C. §103

Claims 2, 6, 24, and 25 have been rejected under §103(a) as allegedly obvious over *Holthaus* (U.S. 6,229,897) in view of the knowledge of one of ordinary skill in the art. Applicant respectfully traverses this rejection.

#### a. Claims 2 and 24

##### i) Proposed Combination Fails to Disclose, Teach, or Suggest Feature

Applicant respectfully submits that claims 2 and 24 are allowable for at least the reason that the proposed combination of *Holthaus* in view of the knowledge of one of ordinary skill in the art does not disclose, teach, or suggest at least the feature of “combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream” as recited in claims 2 and 24. The Office Action admits *Holthaus* does not teach “combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream.” (Office Action, page 3,

paragraph 2). Therefore, *Holthaus* fails to disclose, teach, or suggest every element of the Applicant's claimed invention.

The Office Action asserts that "a person having ordinary skill in the art would have been motivated to use symbol indices in a scrambled digital data stream in order that there will be a secure transmission of text" (Office Action, page 3 paragraph 2). Applicant respectfully submits that claims 2 and 24 do not recite "use symbol indices in a scrambled digital data stream," but rather "combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream." Applicant also respectfully asserts that even assuming, *arguendo*, that deriving symbol indices from a digital data stream is obvious, the step of combining the symbol indices with a pseudo-noise sequence to produce a *symbol-wise scrambled stream rather than a bit-wise scrambled stream* (as is taught in *Holthaus*) is not obvious.

Accordingly, the proposed combination of *Holthaus* in view of the knowledge of one of ordinary skill in the art does not teach at least the claimed limitations of a "combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream" as recited in claims 2 and 24. Since the proposed combination does not teach at least the above-described features recited in claims 2 and 24, a *prima facie* case establishing an obviousness rejection by *Holthaus* in view of the knowledge of one of ordinary skill in the art has not been made. Thus, claims 2 and 24 are not obvious under the proposed combination, and the rejection should be withdrawn.

ii) No Motivation To Combine

Furthermore, Applicant respectfully asserts that the rejection of claims 2 and 24 is improper and should be withdrawn because neither reference expressly or impliedly provides "some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine

reference teachings” (MPEP §706.2(j)). The Office Action asserts that the motivation to “use symbol indices in a scrambled digital data stream” would be to achieve a “secure transmission of text” (Office Action, page 3 paragraph 2). However, Applicants invention does not use scrambling to “secure transmission of text,” but rather to “optimize transmission performance by insuring the use of the entire signal space independently of any transmitted patterns that may occur in the source data stream” (Specification, page 1, lines 20-25). Furthermore, Applicant respectfully asserts that neither secure transmission of text nor utilizing the entire signal space independent of data patterns is a motivation to *combine symbol indices and a PNS* as in Applicant’s claimed invention.

b. Claim 6 and 25

i) Proposed Combination Fails to Disclose, Teach, or Suggest Feature

Applicant respectfully submits that claims 6 and 25 are allowable for at least the reason that the proposed combination of *Holthaus* in view of the knowledge of one of ordinary skill in the art does not disclose, teach, or suggest at least the feature of “said rate is a whole or fractional multiple of the time interval between each symbol in a set of symbol indices” as recited in amended claims 6 and 25. The Office Action admits that *Holthaus* does not explicitly teach “said rate is a whole or fractional multiple of the time interval between each symbol in a set of symbol indices.” (Office Action, page 4, paragraph 2).

The Office Action asserts that “a person having ordinary skill in the art would have been motivated to use a common timing reference to track transmissions easier” (Office Action, page 4 paragraph 2). However, amended claims 6 and 25 do not recite “use a common timing reference.” Applicant’s claimed invention, as defined by claims 6 and 25, generates a PNS “at a rate derived from a symbol rate and different than the bit transmission rate... where said rate is a

whole or fractional multiple of the time interval between each symbol in a set of symbol indices.” Applicant respectfully submits that this feature is not obvious.

Accordingly, the proposed combination of *Holthaus* in view of the knowledge of one of ordinary skill in the art does not teach at least the claimed limitations of a “said rate is a whole or fractional multiple of the time interval between each symbol in a set of symbol indices” as recited in claims 6 and 25. Since the proposed combination does not teach at least the above-described features recited in claims 6 and 25, a *prima facie* case establishing an obviousness rejection by *Holthaus* in view of the knowledge of one of ordinary skill in the art has not been made. Thus, claims 6 and 25 are not obvious under the proposed combination, and the rejection should be withdrawn.

ii) No Motivation To Combine

Furthermore, Applicant respectfully asserts that the rejection of claims 6 and 25 is improper and should be withdrawn because neither reference expressly or impliedly provides “some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings” (MPEP §706.2(j)). The Office Action asserts that the motivation to “use a common timing reference” would be a “desire to have symbols spaced in a predictable manner in order to descramble the transmission” (Office Action, page 4 paragraph 2). While having “symbols spaced apart in a predictable manner” might be a motivation for the general idea of a timing reference of some kind, Applicant respectfully asserts that this is not a motivation to generate a PNS at a rate which is “a whole or fractional multiple of the time interval between each symbol in a set of symbol indices” as claimed in amended claims 6 and 25.

4. Rejection of Claim 3, 4 and 5 under 35 U.S.C. §103

Claims 3, 4, and 5 depend from claim 1, which is believed to be allowable for at least the reasons stated above. Since claim 1 is allowable, Applicant respectfully submits that claims 3, 4, and 5 are allowable for at least the reason that they depend from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 3, 4, and 5 be withdrawn.

5. Rejection of Claim 7 under 35 U.S.C. §103

Claim 7 has been rejected under §103(a) as allegedly obvious over *Holthaus* (U.S. 6,229,897) in view of *Romao* (U.S. 4,594,609). Applicant respectfully traverses this rejection. Applicant respectfully submits that amended claim 7 is allowable for at least the reason that the proposed combination of *Holthaus* in view of *Romao* does not disclose, teach, or suggest at least “said scrambled digital stream being produced at a rate different than said bit transmission rate as recited in amended claim 7.

*Holthaus* does not teach, disclose, or suggest “said scrambled digital stream being produced at a rate different than said bit transmission rate.” In *Holthaus*, the block diagram of the transmitter in FIG. 2 shows A/D converter 13 producing a digital bit stream, which is filtered by filter 40, then scrambled by scrambler 15. The scrambled bit stream is combined, by linear combiner 16, with the stream of pseudo random bits from PN generator 14. There is nothing in *Holthaus* to suggest the rate at which the bits are scrambled by scrambler 15 (FIG. 2) is different than the bit transmission rate. In contrast, Applicants’ claimed invention produces a scrambled digital data stream having a symbol rate different than the bit transmission rate. (Specification, page 10, lines 19-22). Thus, *Holthaus* fails to teach, suggest, or disclose at least a “said

scrambled digital stream being produced at a rate different than said bit transmission rate,” as recited in amended claim 7.

*Romao* contains no discussion whatsoever of scrambling a digital data stream, and therefore fails to teach, suggest, or disclose at least a “said scrambled digital stream being produced at a rate different than said bit transmission rate.” Accordingly, the proposed combination of *Holthaus* in view of *Romao* does not teach at least the claimed limitations of a “said scrambled digital stream being produced at a rate different than said bit transmission rate,” as recited in amended claim 7. Since the proposed combination does not teach at least the above-described features recited in claim 7, a *prima facie* case establishing an obviousness rejection by *Holthaus* in view of *Romao* has not been made. Thus, claim 7 is not obvious under the proposed combination, and the rejection should be withdrawn.

The Office Action asserts that “it would have been obvious a person having ordinary skill in the art to use synchronization as a means to maintain like transmission” (Office Action, page 7 paragraph 1). Applicant respectfully submits that claim 7 does not recite “use synchronization,” but rather “said scrambled digital stream being produced at a rate different than said bit transmission rate.” Applicant’s claimed invention, as defined by claims 6 and 25, produces a scrambled digital data stream, “said scrambled digital stream being produced at a rate different than said bit transmission rate.” Applicant respectfully submits that this feature is not obvious.

Accordingly, the proposed combination of *Holthaus* in view of *Romao* does not teach at least the claimed limitations of a “said scrambled digital stream being produced at a rate different than said bit transmission rate” as recited in claim 7. Since the proposed combination does not teach at least the above-described features recited in claim 7, a *prima facie* case establishing an



obviousness rejection by *Holthaus* in view of *Romao* has not been made. Thus, claim 7 is not obvious under the proposed combination, and the rejection should be withdrawn.

6. Rejection of Claims 8-10 under 35 U.S.C. §103

Claims 8-10 depend from claim 7, which is believed to be allowable for at least the reasons stated above. Since claim 7 is allowable, Applicant respectfully submits that claims 8-10 are allowable for at least the reason that they depend from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 8-10 be withdrawn.

7. Rejection of Claim 11 under 35 U.S.C. §103

Claim 11 has been rejected under §103(a) as allegedly obvious over *Holthaus* (U.S. 6,229,897) in view of *Romao* (U.S. 4,594,609), and further in view of the knowledge of one of ordinary skill in the art, and further in view of *Stocker* (U.S. 5,235,645). Applicant respectfully traverses this rejection. Applicant respectfully submits that claim 11 is allowable for at least the reason that the proposed combination does not disclose, teach, or suggest at least the feature of “combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream” as recited in claim 11.

The Office Action admits *Holthaus* does not teach “combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream.” (Office Action, page 8, paragraph 3). Since neither *Romao* nor *Stocker* contain any discussion of symbols at all, neither *Romao* nor *Stocker* discloses, teaches, or suggests using “combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream.”

The Office Action asserts: “It would have been obvious to a person having ordinary skill in the art to combine the teachings of *Stocker*’s pseudo-noise with that of *Holthaus*’ secured

analog voice communication...” (Office Action, page 9 paragraph 2). *Holthaus* and *Stocker* both teach the general concept of scrambling by combining a pseudo-random noise sequence with a bit-wise data stream. Applicant respectfully asserts that even assuming, *arguendo*, that deriving symbol indices from a digital data stream is obvious, the step of combining the symbol indices with a pseudo-noise sequence to produce a symbol-wise scrambled stream rather than a bit-wise scrambled stream is not obvious.

Accordingly, the proposed combination of *Holthaus* in view of *Romao*, and further in view of the knowledge of one of ordinary skill in the art, and further in view of *Stocker* does not teach at least the claimed limitations of a “combining said symbol indices and said PNS to produce a symbol-wise scrambled digital data stream” as recited in claim 11. Since the proposed combination does not teach at least the above-described features recited in claim 11, a *prima facie* case establishing an obviousness rejection has not been made. Thus, claim 11 is not obvious under the proposed combination, and the rejection should be withdrawn.

#### 8. Rejection of Claims 12-18 under 35 U.S.C. §103

Claims 12-18 depend from claim 11, which is believed to be allowable for at least the reasons stated above. Since claim 11 is allowable, Applicant respectfully submits that claims 12-18 are allowable for at least the reason that they depend from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 12-18 be withdrawn.

#### 9. Rejection of Claims 20-23 under 35 U.S.C. §103

Claims 20-23 depend from claim 19, which is believed to be allowable for at least the reasons stated above. Since claim 19 is allowable, Applicant respectfully submits that claims 20-23 are allowable for at least the reason that they depend from an allowable claim. *In re Fine*,

837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 20-23 be withdrawn.

10. Rejection of Claim 26 under 35 U.S.C. §103

Claim 26 has been rejected under §103(a) as allegedly obvious over *Holthaus* (U.S. 6,229,897) in view of *Stocker* (U.S. 5,235,645). Applicant respectfully traverses this rejection. Applicant respectfully submits that amended claim 26 is allowable for at least the reason that the proposed combination of *Holthaus* in view of *Stocker* does not disclose, teach, or suggest at least the feature “means for scrambling...to produce a scrambled digital data stream... said scrambled digital data stream being produced at a rate different than said bit transmission rate” as recited in amended claim 26.

Neither *Holthaus* nor *Stocker* teaches, discloses, or suggests “means for scrambling...to produce a scrambled digital data stream... said scrambled digital data stream being produced at a rate different than said bit transmission rate.” In *Holthaus*, the block diagram of the transmitter in FIG. 2 shows A/D converter 13 producing a digital bit stream, which is filtered by filter 40, then scrambled by scrambler 15. The scrambled bit stream is combined, by linear combiner 16, with the stream of pseudo random bits from PN generator 14. There is nothing in *Holthaus* to suggest the rate at which the bits are scrambled by scrambler 15 (FIG. 2) is different than the bit transmission rate. In *Stocker*, a stream of sync and data bits is provided to the scrambler which produces an output bit stream at AND gate 16. (See FIG. 1.) There is nothing in *Stocker* to suggest the rate at which the bits are scrambled by the scrambler is different than the bit transmission rate. In contrast to the teachings of both *Holthaus* and *Stocker*, Applicants’ claimed invention produces a scrambled digital data stream at a rate different than the bit transmission rate. (Specification, page 10, lines 19-22).

Accordingly, the proposed combination of *Holthaus* in view of *Stocker* does not teach at least the claimed limitations of a “means for scrambling...to produce a scrambled digital data stream... said scrambled digital data stream being produced at a rate different than said bit transmission rate,” as recited in amended claim 26. Since the proposed combination does not teach at least the above-described features recited in claim 26, a *prima facie* case establishing an obviousness rejection by *Holthaus* in view of *Stocker* has not been made. Thus, claim 26 is not obvious under the proposed combination, and the rejection should be withdrawn.

11. Rejection of Claim 27-46 under 35 U.S.C. §103

Claims 27-46 depend from claim 26, which is believed to be allowable for at least the reasons stated above. Since claim 26 is allowable, Applicant respectfully submits that claims 27-46 are allowable for at least the reason that they depend from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 27-46 be withdrawn.

12. Newly Added Claims


Newly added claims 47-49 are based on subject matter that is explicit and/or inherent within the description of the specification and/or the drawings. Applicant submits that no new matter has been added in the new claims and that the new claims are allowable over the cited prior art. Therefore, Applicant requests the Examiner to enter and allow the above new claims.

**CONCLUSION**

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-49 be allowed to issue. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted,

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